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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/594,552

09/27/2006

Akihiko Nishio

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EXAMINER

WANG-HURST, KATHY W

ART UNIT

PAPER NUMBER

4173

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/594,552	<b>Applicant(s)</b> NISHIO, AKIHIKO	
	<b>Examiner</b> KATHY WANG-HURST	<b>Art Unit</b> 4173	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 9/27/2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/27/2006</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-7 and 9-10 are rejected under 35 U.S.C. 102(e) as being anticipated by **Hottinen (US 2004/0066754)**.

Regarding claim 1, Hottinen discloses a base station apparatus that transmits a multicarrier signal composed of a plurality of subcarriers, comprising:

a selection section that selects a mobile station for which a data channel is assigned to the plurality of subcarriers in accordance with channel quality of a control channel for transmitting control information necessary for data transmission on a data channel

**(Abstract, and [0064]);** and

an assignment section that assigns the data channel to the plurality of subcarriers in

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accordance with channel quality of the data channel, with a mobile station selected by the selection section as an object **([0064] dynamically select subcarriers based on quality [0014])**.

Regarding claim 2, Hottinen discloses the base station apparatus according to claim 1, wherein the selection section selects mobile stations up to a possible number of multiplexing in the plurality of subcarriers in high-to-low order of the channel quality of the control channel **([0017] prioritize depending on quality therefore high-to-low order; and [0041] multiplexing)**.

Regarding claim 3, Hottinen discloses the base station apparatus according to claim 1, wherein the selection section selects the mobile station for which the channel quality of the control channel is greater than or equal to a predetermined quality **([0014] determining for each communication resource a quality indication based on selected factors)**.

Regarding claim 4, Hottinen discloses the base station apparatus according to claim 1, wherein the selection section selects the mobile station for which the data channel is assigned to the plurality of subcarriers, in accordance with channel quality of a downlink control channel for transmitting data channel assignment information or MCS information **([0064] selecting subcarriers using CQI feedback)**.

Regarding claim 5, Hottinen discloses the base station apparatus according to claim 1, wherein the selection section selects the mobile station for which the data channel is assigned to the plurality of subcarriers, in accordance with channel quality of an uplink control channel for transmitting ACK or NACK **([0064] and [0045] uplink control channel)**.

Regarding claim 6, Hottinen discloses the base station apparatus according to claim 1, wherein the assignment section assigns the control channel to a predetermined subcarrier among the plurality of subcarriers **([0014] [0064])**.

Regarding claim 7, Hottinen discloses a mobile communication system in which a base station apparatus and a mobile station apparatus perform radio communication, wherein:  
the base station apparatus receives channel quality information of a data channel from the mobile station apparatus **([0009])**; and  
the mobile station apparatus determines whether or not to transmit the channel quality information to the base station apparatus, in accordance with channel quality of a control channel **([0009])**.

Regarding claim 9, Hottinen discloses the mobile communication system according to

claim 7, wherein the mobile station apparatus measures channel quality using a reception SIR of the control channel ([0067]).

Regarding claim 10, Hottinen discloses the mobile communication system according to claim 7, wherein the mobile station apparatus measures channel quality using required transmission power of the control channel ([0016][0038]).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hottinen in view of **Nobukiyo et al. (US 6993294)**, herein referred as Nobukiyo.

Regarding claim 8, Hottinen discloses the mobile communication system according to claim 7 ([0014]), but fails to disclose the mobile station apparatus determines that the channel quality information is to be transmitted when channel quality of the control channel is greater than or equal to a threshold value, and determines that the channel quality information is not to be transmitted when channel quality of the control channel is less than a threshold value. Nobukiyo teaches a mobile communication system in which

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the quality information is reported when the reception quality of the mobile station is greater than or equal to the threshold value (**col. 14, lines 3-7**). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the transmitting quality information above threshold taught by Munehiro into the method disclosed by Hottinen in order to extend battery life and improve high speed packet transmission service with low error ratio (**col. 13, line 57-col. 14, line 7**).

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hottinen in view of **Newberg et al. (US 7088734)**, herein referred as Newberg.

Regarding claim 11, Hottinen discloses a scheduling method of a data channel for a plurality of subcarriers used in a multicarrier transmission system according to channel quality of a data channel (**[0041] scheduler [0042] two dimension grid [0014] allocate channel depending on quality indication**), but fails to explicitly disclose a multicarrier signal having the plurality of subcarriers in a frequency axis direction is transmitted continuously in a time axis direction, and frequency axis direction scheduling is performed. Newberg teaches a communication system employing a combination of frequency division duplexing and time division multiple access in which that data are transmitted at different frequencies in the frequency domain and continuously in the time domain (**col. 1, lines 27-38**). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to

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modify scheduling method of Hottinen by transmitting continuously in time at different selected frequencies taught by Newberg in order to more efficiently transmit data by fully utilizing both time domain and frequency domain (**col. 1, lines 27-38 and col. 2, lines 58-67**).

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cheng et al. (US 2006/0083157) discloses a multi-carrier transmission device and communication method.

Salmenkaita et al. (US 2003/0210665) discloses a system and method for dynamic frequency allocation for packet switched services.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KATHY WANG-HURST whose telephone number is (571)270-5371. The examiner can normally be reached on Monday-Thursday, 7:30am-5pm, alternate Fridays, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benny Tieu can be reached on (571)272-7490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KATHY WANG-HURST/  
Examiner, Art Unit 4173

/Benny Q Tieu/  
Supervisory Patent Examiner, Art Unit 4173